Humanizing Technology:
Cisco Puts "Green" Lights on the Information Highway

A Green Technology Interview with Laura Ipsen

by Racquel Palmese

Started by a small group of computer scientists from Stanford University, Cisco Systems,Inc., has been busy wiring the world for technology and developing Internet Protocol (IP)-based networking technologies for over two decades.
Now the company is poised to solve some of the world's trickiest environmental challenges. Laura Ipsen, Cisco's vice president of Global Policy and Government Affairs, works with governments worldwide piloting programs that utilize technology and networking to achieve their green initiatives. In this wide-ranging interview with *Green Technology Magazine*, Ipsen takes us into a future greened by advanced, "humanized" networking and tailored information technology. It is a future that is rapidly becoming present-time reality, as these new technologies are being tested in cities around the world. Along with a passion for technology, she is also a strong proponent of gender equity issues. She discusses why women are inspired to take leadership on environmental issues and the importance of attracting girls to math, science and technology.

Cisco describes itself as a global leader for networking. What does that mean, especially in terms of today's environmental challenges?

Cisco has grown from a box company of routers and switches into a company addressing how the future of communications is going to work. We are about using the network as a platform to change all of life's experiences - the way that we work, live, play and learn. The company has grown globally, building network-based solutions that drive what companies do, how governments are transforming, and, increasingly, how small businesses and individuals can use technology and empower themselves. Our whole next generation campaign of the "human network at work," means that technology becomes more human and lifelike in real time. We're seeing this next wave that is based both on the network's intelligence and on the human network and the power of collaboration. It's really through this network that people around the world are able to connect and collaborate in new ways. That's how we define the human network at work.

What does this mean in terms of someone working towards green government?

It's about saying we have a network and technology that enable us to get access to information and content. One of the challenges is that there's so much out there. How can it become more personal? If my interests are about green issues, how do I use the network to educate myself about the environment? How do I use the network to find other people who want to work on green issues in my community? Technology itself isn't warm until you engage with it, and then it becomes more human.

Take it to a high level on green. The best way for us to address climate change is really the power of innovation and collaboration. The human network makes that possible. A community may have an environmental challenge, but the people in the community may not be able to solve the problem. The power of using technology to collaborate with the best experts around the world to get access and visibility to issues is what we think will solve

those challenges, and, indeed, the biggest challenges in the world. On an issue like climate change, you can use technology to collaborate so you have the best scientists, government officials - a combination of the public and private sectors - coming together to solve big issues. That's where the network becomes human. It changes the experience; it creates new pathways and opportunities for people to address issues that typically have been very silo'd.

If you are an official in a small city and want to adopt a green plan but you don't know where to start, you can go out on the Internet and search for green mandates for cities and come up with lots of information. But how do you create a roadmap adapted to your needs? It sounds like what you're talking about is the next level, where they could actually find other people to collaborate with.

Yes. It's not just finding content. It's leveraging the technology to personalize what you do. For example, a sleeper issue in climate change may be water. How are we possibly going to address all the water issues around the world? It may be that there are a million ideas out there that could become a knowledge base. But the only way to collect those ideas is through the power of collaboration and a network. Having a one-way, network-based interface and e-business isn't enough. It's really about how disparate groups can actually connect together to take on the top challenges. We're seeing that in action at the government level with the Connected Urban Development partnership, which is about building a global community of connected cities.

Would you give us an overview of this initiative?

As part of our participation in the Clinton Global Initiative, we made the Connected Urban Development partnership commitment to establish three pilot cities to explore new technology opportunities that would have an impact on that city's carbon footprint and its green objectives. It was really through the power of technology and collaboration between the government and the private sector that we created a number of new opportunities and innovations around green and sustainable cities. We have three pilot cities -Amsterdam, San Francisco and Seoul - and we have made an initial commitment of $15 million. Out of those we have grown several innovations that really are a showcase for others to learn from about how to use technology.

In the case of San Francisco we have a Wi-Fi bus that we hope will create new incentives and opportunities for people to take public transportation. That was the goal of Mayor Newsom, who said he wanted to make his buses more green, to use a technology infrastructure to do diagnostics about their performance, to track where they are in the city to help alleviate traffic congestion, and to allow people to communicate using Wi-Fi on the bus.

We are working in public-private partnerships with the mayors of these three cities. We just engaged another four cities to ascertain what their key challenges are on the environment and how technology can play a role. This is in terms of traffic congestion, creating Smart Work Centers, and leveraging new technologies. An example would be using GPS (Global Positioning Systems) to get people personalized travel assistance that gives information about roadwork and traffic congestion with real time monitoring so they can make smart decisions about their commutes. Through collaboration with the cities using these technologies, we are finding sustainable models for them to be more green.

What types of projects are you doing in Amsterdam?

In Amsterdam, we're working on developing what we call Smart Work Centers. These are centers that we are developing with local partners in real estate and with the city's development organizations. Smart Work Centers are in the rings around the city, outside the city center, where people can work remotely in a professional work environment with access to broadband and other technology, such as unified communications and TelePresence. This creates the opportunity for employees to either work in the range of a city, or to time-shift their work so they can go in early in the morning, get their meetings and other work accomplished, and then commute into the city if they have a critical meeting to attend. The neat thing is that a lot of the real estate that's being used in this situation is buildings that were vacant on the fringes of the city. So this is giving an in-the-city experience without really being there and then really helping on some of the massive traffic congestion issues that the city has.

We're very optimistic that they can measure the impact of these Smart Work Centers in terms of GHG (greenhouse gas) reduction. It's well underway, and we're developing multiple sites.

What will the next generation of technology look like for green cities?

We're developing new technologies and architectures around traffic mitigation and environmental dashboards to help cities develop tools to track their carbon footprints. This is a big challenge for cities. For example, many European cities are making carbon reduction commitments, and the biggest challenge is to make sure they can do the actual daily carbon footprint measurements with a tracking system. They need to see what the impact is in terms of reducing GHG emissions that when they make investments in renewables or change some of their traffic processes. Those are some of the things we're exploring in our next generation of technology. The goal of this is to develop pilots that will be replicable, using an intelligent network and a platform to share what we've learned as best practices so these types of innovations can be replicated in other cities. We were proud when, a few months ago, the European Commission recognized the Cisco Connected Urban Development program as a best practice of innovation for sustainable cities.

Do you think that what you're doing in San Francisco can be replicated throughout the state?

Absolutely. Obviously having a very strong leader on green issues in Mayor Newsom helps and gives the program a lot of visibility. It's important to work with cities with strong leaders, a committed government body and also a committed CIO. It's really a leadership issue to make the type of investments in changes and to implement the technologies. In San Jose (where Cisco is headquartered), Mayor Reed is very progressive on environmental issues. We are working with the city to show them what we're doing in San Francisco to see how we can replicate some of the business models in San Jose. We think this can easily scale in many of the cities.

Who do you work with to put these partnerships together?

Initially we started out on our own and through the Clinton Global Initiative invested $15 million spread across multiple cities. One of the things we're finding as we work on the issues is that more companies not only approach us, but they approach the city with ideas about utilizing technology effectively in other areas of traffic management other forms of transportation. We provided the seed money, and the goal is to create enough momentum that it attracts other consultants or businesses that have other ideas. We also have been working with MIT on developing new technology, so we have a partnership with them as

part of our Connected Urban Development strategy.

Besides strong leadership at local levels, what else can government do to help move along this type of partnership?

Government needs to set goals and priorities to decide what's important for their cities. Leadership is crucial, because even in San Francisco, which is a very green city, the types of investments that you might have to make in infrastructure and technology are things that are the decisions of policymakers and appropriators, so it is important that everyone is onboard with the strategy.

You also focus on technological aspects of green building. Would you explain that?

It's about using an intelligent network, having a Wi-Fi or wireless enabled building and tying that technology back into things like heating and cooling and water usage to create more sustainable opportunities for existing buildings. We are addressing how technology is actually merged with things like LEED (green building certification), so that the way you design a building leverages technology to achieve the highest level of LEED certification.

Where are you putting your focus right now?

We're developing a vision for the future of Connected Urban Development. In 2008 we engaged four new cities, all in Europe - Birmingham, Hamburg, Lisbon and Madrid - primarily because there is so much momentum in Europe at the city level, and the mayors are very active. Many of the mayors are making commitments for their cities on their greenhouse gas reductions.

Do we have a way to go to catch up with the Europeans on this?

Yes, but we should be optimistic because we have Governor Schwarzenegger, who has been extremely progressive with things like AB32 and is really setting the tone for the rest of the states across the country. I think we have an opportunity with this governor to leverage his support of innovation to solve a lot of challenges. He's been very active in engaging the technology community to understand the power of innovation at every level when it comes to climate issues for the state and the commitments we're making on greenhouse gas reductions.

On a more personal note, as vice president of Global Policy and Government Affairs for Cisco, can you give us a snapshot of what your average day looks like?

As a mother of three, nothing in my life is average or balanced. What's really fun about leading Global Policy and Government Affairs, and also as the executive sponsor of gender diversity at Cisco and co-chair of our Eco Board, is that I get to collaborate on issues with people across the company, and externally with governments. In any one day I could be doing a TelePresence meeting to work on a coaching and mentoring program that we're developing on technology for women, or hosting 100 ambassadors from around the world talking about green technology and the power of innovation. I might be preparing my CEO for a political meeting, engaging my team over TelePresence on how we are going to collaborate in the future and using a Web 2.0 model to track our networking with government officials worldwide.

We're a company just shy of 66,000 and we use the technology to access people around the

world to get our jobs done. No one day is average but what's exciting for me now is that I have an ability to connect what I do on public policy, what I do with governments around the world, to green issues and to issues that are important to gender diversity. The human network and social networking is creating connections and opportunities in a different way today.

How big is your team?

My team itself is right around 25 globally. This morning I did a performance review for the person that works for me in India. More broadly, the team that I work with and manage through the Eco Board and our Green Taskforce includes hundreds of people that I work on strategic initiatives with.

You are a big supporter of gender equity and especially supportive of young women getting into the fields of science and technology. Why is this so important to you?

We have a group within Cisco that focuses on getting girls into technology. We're really trying to change the branding and imaging of what technology jobs look like. It's not the pocket protector stuff that it used to be. We trying to get more girls in technology to hopefully increase the pipeline a lot earlier.

When I talk to other women who are doing this, everyone has a personal story about what got them into green and the environment. I don't think women are doing this because they see it as a big career opportunity, but as an opportunity for leadership and something that's meaningful. For me it was when my son came home from school and had written a report about why the polar bears are losing their home. He said, "Mommy, what are we going to do about this?" That really got me thinking that we can do something with the technology. It just ended up being the right time for me. I raised my hand. Part of what women need to do is when they see a compelling opportunity as it relates to green and the environment is to do something, to raise their hands and take the opportunity make a difference. That's where I really see women having a huge impact.

When I started Cisco's Eco Board, which is really the leadership group that drives the company's green agenda, I would say the majority of people who sent me emails asking what they can do to help were women.

What would you like to say to those working in green government, especially women?

The leadership in Sacramento, including people like Susan Kennedy and Secretary Rosario Marin, all great leaders on environmental issues, my message would be to keep up the good work. This is a state where women are passionate about green. We're making a difference, and we really can connect our green goals back to what our personal goals are. I think these are the women out there who are really going to create the change for the future.